

## A new species of *Daphnella* (Gastropoda: Conidae) from South-Western Japan and the Western Pacific

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**ABSTRACT.** A new species of a turrid gastropod is described and compared with similar species. The new species has been collected in Japan from Okinawa Prefecture and from Wakayama Prefecture, central Honshu. It has also been taken off Aliguay Island in Northern Mindanao Province, Philippine Islands, and from several localities in the Western Pacific. The new species has a brown maculate pattern with numerous dark brown spots, a brownish purple siphonal process and a rather deep, wide anal sinus.

### INTRODUCTION

The Senkaku Islands are located in the southwestern corner of the Okinawa Archipelago and Shiono-misaki is at the southernmost extremity of the island of Honshu in mainland Japan.

*Daphnella* species are mostly distributed in the Indo-Pacific, from shallow to deep water. Several new species were reported from deep water in Japan by Dr. Tokubei Kuroda in the 1950s, but were not described. Two species were described by Habe & Masuda (1990) and many were illustrated by Hasegawa et al. (2000).

The author recently obtained several examples of a new species from the Senkaku Islands and Shiono-misaki in Japan, as well as from the Philippines. Further material has also been dredged off New Caledonia, on the Norfolk Ridge, in the Coral Sea, off Fiji, off Tonga and in the Austral Islands.

Careful comparison with known species has revealed them to represent a new species of the genus *Daphnella*.

### Abbreviations

NSMT : National Science Museum, Tokyo, Japan.

MNHN : Museum national d'Histoire naturelle, Paris, France.

lv.: live-collected.

dd.: empty shell.

### SYSTEMATICS

Family CONIDAE Fleming, 1822

Subfamily RAPHITOMINAE Bellardi, 1875

Genus *Daphnella* Hinds, 1844

Type species: *Pleurotoma lymneiformis* Kiener, 1839 (s.d. Herrmannsen, 1847)

*Daphnella pulviscula* n. sp.

Figs 1 – 8

**Type locality.** Off Senkaku Islands, Okinawa Prefecture, Japan, trawled live at 100m.

**Type material.** Holotype: 27.6mm x 11.9mm, off Senkaku Islands, Okinawa Prefecture, Japan, 100 m. NSMT Mo-73702 (Figs 1-2).

Paratypes : 21.8 x 9.9mm, same data as holotype. MNHN (Figs 3-5) : 23.3 x 11.1mm, same data as holotype. NSMT Mo-73703 (Figs 6-7).

**Other material examined.** Philippines: 32.3mm x 13.9mm; 25.4mm x 10.3mm; 18.7mm x 8.1mm; 20.9mm x 9.3mm; 18.5mm x 9.1mm, off Aliguay Island, northern Mindanao, trawled live at 100-140m. Chino coll.

Japan : 18.6mm x 9.0mm, off Shiono-misaki, Wakayama, dead shell trawled at 160m, Chino coll.; 14.4mm x 6.3mm, dead shell, Tanaka coll.

New Caledonia : LAGON, sta. 389, 22°43' S, 167°05' E, 274m, 1 dd.— MUSORSTOM 4, sta. DW 234, 22°15' S, 167°08' E, 350-365 m, 1 dd.— BATHUS 1, sta. DW 688; 20°33' S, 165°00' E, 270-282 m, 2 dd.— BATHUS 2, sta. DW 724, 22°48' S, 167°26' E, 344-358 m, 1 dd.— BATHUS 4, sta. DW 886, 21°01' S, 164°28' E, 250-300 m, 1 dd.— BATHUS 4, sta. DW 887, 21°07' S, 164°28' E, 320-344 m, 1 dd.— BATHUS 4, sta. DW 927, 18°56' S, 163°22' E, 444-452 m, 2 lv.— BATHUS 4, sta. CP 930, 18°51' S, 163°24' E, 520-530 m, 1 dd.— SMIB 8, sta. DW 158, 24°46' S, 168°08' E, 262-290 m, 1 dd.— SMIB 8, sta. DW 170-172, 23°41' S, 168°00' E, 230-290 m, 1 dd.— NORFOLK 1, sta. DW 1738, 22°51' S, 167°10' E, 340-381 m, 1 lv.— Commercial trawler, 22°40' - 50' S, 167°10' - 30' E, 200-350 m, 2 lv. Largest specimen 22.6mm x 10.1mm. All MNHN.

Loyalty Rise : SMIB 5, sta. DW 87, 22°19' S, 168°41' E, 370 m, 1 dd. (20.6mm x 9.2mm) (MNHN).

Norfolk Ridge : BATHUS 3, sta. DW 829; 23°21' S, 168°02' E, 386-390 m, 1 dd.— BATHUS 3, sta. DW 830, 23°20' S, 168°01' E, 361-365 m, 1 dd.— BATHUS 3, sta. DW 838, 23°01' S, 166°56' E, 400-402 m, 1 dd.— NORFOLK 1, sta. DW 1729, 23°20' S, 168°16' E, 340-619 m, 1 dd. Largest specimen 23.5mm x 11.2mm. All MNHN.

Coral Sea : MUSORSTOM 5, sta. 269, 24°47' S, 159°37' E, 250-270 m, 1 lv.— 16.0mm x 7.1mm.

MUSORSTOM 5, sta. 270, 24°49' S, 159°34' E, 223 m, 1 dd. All MNHN.

Fiji: BORDAU 1, sta. DW 1417, 16°27' S, 178°55' W, 353 m, 1 dd.—17.3mm x 8.0mm, BORDAU 1, sta. DW 1465, 18°09' S, 178°39' W, 290-300 m, 1 dd. All MNHN.

Tonga: BORDAU 2, sta. DW 1544, 21°18' S, 175°18' W, 441-443 m, 1 dd.—BORDAU 2, sta. DW 1607, 22°15' S, 175°23' W, 356-367 m, 1 dd.—17.3mm x 8.0mm, BORDAU 2, sta. DW 1636, 21°44' S, 175°20' W, 321-331 m, 1 dd. All MNHN.

French Polynesia, Austral Islands: 14.0mm x 6.7mm, BENTHAUS, sta. DW 1973, 23°23.5' S, 150°43.9' W, 200-230 m, 1 dd. MNHN.

**Distribution.** Japan: Shiono-misaki, Wakayama Prefecture; Senkaku Islands, Okinawa Prefecture; Philippines: Aliquay Island, Northern Mindanao; Pacific: New Caledonia; Loyalty Rise; Norfolk Ridge; Coral Sea; Fiji; Tonga; French Polynesia. Live collected in 100-444 m.

**Description.** Shell relatively thin, medium sized for genus (to 32.3mm in height) with large, well inflated fusiform body whorl representing 65-70% of shell height. Conical spire with 9 convex teleoconch whorls; shoulder weakly angulate with slightly concave area above, suture deeply adpressed.

Protoconch with obliquely reticulate sculpture. Teleoconch whorls slightly convex with no pronounced subsutural ramp; suture distinct, rather shallow. First two teleoconch whorls with 10 spiral cords, succeeding ones with 18-20 cords and distinctly defined suture. Body whorl with 45-50 cords. Axial ribs indistinct and barely visible. Aperture large, elongate, broad, oval, about 48% of shell height, deeply indented between shoulder and suture. Parietal wall of aperture convex in upper part; columellar margin of canal only slightly curved, overlaid in lower part by inner shell layer. Callus narrow and thin. Outer lip with thin edge but inner margin of aperture

thickened by rim of callus. Anal sinus sutural, rather deep and wide. Siphonal canal straight, wide, rather short, broadly open. Protoconch light brown; first two teleoconch whorls whitish brown, succeeding ones with light brown surface bearing numerous, small, axially elongated dark brown spots. Anal sulcus with alternating dark and light brown maculations. Columellar lip and anterior canal brownish purple. Soft parts not examined.

**Etymology.** *pulviscula*, ( Latin: fine powder ) refers to the brown color and powder-like surface appearance of the species.

**Remarks.** The shape of the new species resembles closely *Daphnella nobilis* Kira 1959 (Figs 11-13), which is sympatric at the type locality, but *D. pulviscula* n.sp. differs in having a much finer surface sculpture and a dark brown maculate pattern. *D. angulata* Habe and Masuda, 1990 (Figs 14-15) and *D. semivaricosa* Habe and Masuda, 1990 both resemble the present species; however both have elongate, strongly sculptured whitish shells.

*D. pernobilis* Kuroda and Habe, 1961 (Figs 9-10), the holotype of which was illustrated by Higo et al. (2000: fig. G3860), has a very inflated whitish shell and differs considerably from the new species.

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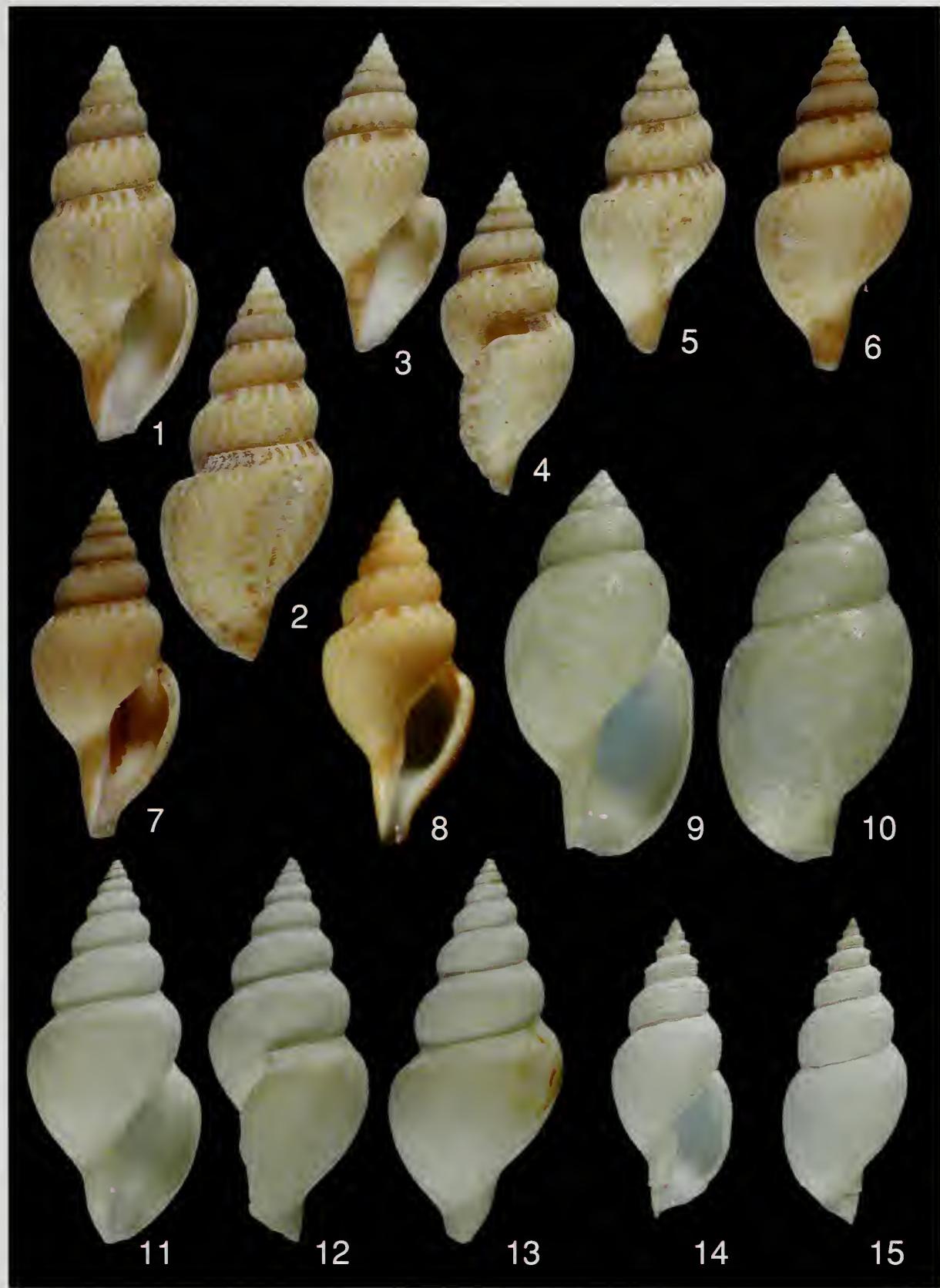
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#### Figures 1-15

1-8. *Daphnella pulviscula* n. sp.

1-7. Japan, off Senkaku Islands, Okinawa Prefecture. 1-2. 27.6mm x 11.9mm (holotype NSMT Mo-73702); 3-5. 21.8mm x 9.9mm (paratype MNHN); 6-7. 23.3 x 11.1mm (paratype NSMT Mo-73703); 8. Loyalty Rise, SMIB 5, sta. DW 87, 20.6 x 9.2 mm (MNHN).

9-10. *D. pernobilis* Japan, off Kochi Pref., 33.3mm x 17.2mm, coll. Mitsuo Chino; 11-13. *D. nobilis* Japan, off Kochi Pref., 36.2mm x 17.2mm, coll. Mitsuo Chino; 14-15. *D. angulata* Japan, off Kochi Pref., 25.4mm x 10.2mm, coll. Mitsuo Chino



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